

Daily physical activity and COPD

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Valorization addendum



Relevance

COPD is a highly prevalent disease, which negatively affects patients daily functioning. It is known that COPD patients experience problems with performance of activities of daily life (ADLs) and that the prevalence of physical inactivity levels is remarkably higher compared to healthy controls. These lower levels of physical activity have a tremendous impact on many health related outcomes and progression of the disease. Since physical activity is an important modifiable risk factor, it can therefore be an important disease management target in COPD.

Although physical activity has been studied frequently in COPD, less is known about ADLs. Moreover, strategies for improving physical activity are rarely studied. The current thesis investigated the impact of COPD on the performance of ADLs, strategies to improve functional exercise performance, symptom burden and physical activity level and the impact of longitudinal changes in physical activity level. This thesis provided new evidence in this field of expertise:

First, our findings showed that patients with COPD experience more problems during the performance of domestic ADLs, as indicated by a higher task-related oxygen uptake and ventilation and a higher degree of dyspnea and fatigue. These differences were already present in the earliest stages of the disease. Furthermore, patients in different BMI categories (underweight, normal, overweight or obese BMI) experience similar functional limitations during the performance of domestic ADLs.

Second, our data indicate that walking aids can improve functional exercise performance not only indoors, but also during outdoor use. Though, clinicians should base the selection of a walking aid preferably on an exercise field test instead of an indoor 6MWT, since test can be used to acquire more patient-meaningful information on walking ability and walking pattern and patients reported to use their walking aid mostly during outdoor activities. Moreover, patients' needs and daily use should also be taken into consideration.

Third, we demonstrated that a longitudinal decline in physical activity is significantly more common in subjects with COPD compared to healthy subjects, and that determinants of these longitudinal changes in physical activity are different. Moreover, a longitudinal decline to a low physical activity level was associated with an increased all-cause mortality risk. More important, findings suggest that once patients with COPD become physically low active, the high mortality risk cannot be reversed by increasing activity levels, showing the importance of encouraging an active lifestyle in patients with COPD.

Fourth, we showed the promising effects of activity monitor-based counseling on improvement of physical activity and health-related outcomes in patients with DMII. It can be assumed that activity monitor-based interventions in patients with COPD and CHF will have similar beneficial effects, however, more research is needed.